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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/935,896	08/23/2001	Howard S. Ducotey JR.	EH-10485	1350

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EXAMINER	
JIMENEZ, MARC QUEMUEL	

ART UNIT	PAPER NUMBER
3726	

DATE MAILED: 10/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/935,896	DUCOTEY ET AL.	
	Examiner	Art Unit	
	Marc Jimenez	3726	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 November 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 3-8* is/are rejected.

7)☒ Claim(s) *2* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 August 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. **Claims 1, 3-5 and 8** are rejected under 35 U.S.C. 102(a) as being anticipated by Applicant's Admitted Prior Art (hereinafter APA) found on pages 3-5 of applicant's specification.

APA teaches that it was known to remove an existing coating (paragraph [007], "..., the thermal barrier coatings that include the bond coat and the ceramic top coat, may be removed from the blades and vanes.". See also paragraph [010]), recoating the surface of the article with a nonoriginal coating (paragraph [009] "... reapplying a non-original replacement coating..."), providing an electrode for electrical discharge machining (paragraph [016]) "The electrode consists of at least one small diameter elongated end that produces the cooling air metering section)", receiving the electrode in the outer shaped portion of the plurality of cooling holes and removing the nonoriginal coating from the outer shaped portion using electrical discharge machining such that the outer shaped portion meets the predetermined air flow requirement (paragraph [016], "An EDM method for producing or remanufacturing diffusion holes...".). The limitation receiving the electrode in the "outer shaped portion" is broad enough to include merely

placing the electrode in any type of hole because "outer shaped portion", as claimed, does not specifically describe the shape of the hole. Regarding claim 3, there are multiple plurality of cooling holes in turbine blades. For example, if there are only four cooling holes, there could be considered to be one set having two holes and another set having two holes. As currently claimed, the limitation "diffusion holes" do not require a particular hole structure or shape.

3. **Claims 6-7** are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over APA.

APA does not specifically disclose the claimed materials for the substrate. However, these are typical materials used for turbine components. Therefore, APA inherently teaches the claimed materials.

Alternatively, official notice is taken that the use of the claimed materials was well known to a person of ordinary skill in the art, at the time of the invention, to provide a high strength turbine component.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. **Claims 1 and 3-8** are rejected under 35 U.S.C. 103(a) as being unpatentable over APA in view of Foster et al. (US4726104).

APA teaches on page 4, paragraphs [010]-[012] that it is known to repair blades by first stripping off an original coating and then applying a nonoriginal replacement coating. However, when there are cooling holes, the nonoriginal coating may coat portions of the cooling holes and cause "coatdown". To remove coatdown, erosive treatment such as propelling high velocity, abrasive particles into the mouth of each affected hole.

Foster et al. teach that it was known in the past to repair blades and vanes having cooling holes where there is also a phenomena which is considered a "coatdown" process wherein welding material falls into the cooling holes and weld the cooling holes shut (col. 1, lines 35-44). To reopen the holes, the cooling holes are re-drilled by using either lasers or EDM (col. 1, lines 41-43).

There are therefore, various ways to re-open a cooling hole. Among them are by propelling abrasive particles, EDM or laser drilling.

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to have used EDM to re-open the cooling holes, in light of the teachings of Foster et al., in order to utilize a machining operation that can be used for complex shaped holes.

It is noted that both the disclosure of APA and Foster et al. both describe the need to reopen cooling holes. Given the fact that there are multiple ways to reopen cooling holes, one of ordinary skill in the art would be motivated to use one or all hole forming techniques depending upon the desired accuracy of the finished product needed.

Regarding claim 3, there are multiple plurality of cooling holes in turbine blades. For example, if there are only four cooling holes, there could be considered to be one set having two holes and another set having two holes.

Official notice is taken that the use of the claimed materials was well known to a person of ordinary skill in the art, at the time of the invention, to provide a high strength turbine component.

Allowable Subject Matter

6. Claim 2 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record do not specifically disclose a combination of steps including both electrical discharge machining as described in claim 1 and propelling abrasive particles as recited in claim 2.

Response to Arguments

8. Applicant's arguments filed 11-5-03 have been fully considered but they are not persuasive.

9. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "the repair

material is selectively applied to those cooling holes 18 that do not meet predetermined inspection repair criteria" as argued on page 5, lines 9-10.) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

10. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "an electrode 62 which is adapted specifically to restore the flow requirements of the diffusion passage 52 *only*") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

11. Applicant's main argument is that the instant invention is directed to a combination of selective repair steps of the blade as described on pages 5-6 of applicant's arguments filed 11-5-03. However, the claims do not include the combination of steps argued.

Conclusion

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Interviews After Final

13. Applicant note that an interview after a final rejection will not be granted unless the intended purpose and content of the interview is presented briefly, in writing (the agenda of the interview must be in writing) to clarify issues for appeal requiring only nominal further consideration. Interviews merely to restate arguments of record or to discuss new limitations will be denied. See MPEP 714.13 and 713.09.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc Jimenez whose telephone number is (571) 272-4530. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bryant can be reached on (571) 272-4526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Marc Jimenez, Primary Examiner
Art Unit 3726

MJ
10-25-06